ABSTRACT

A method analyzes the hydrocarbon composition of geological strata. The method includes an analysis of gaseous hydrocarbon concentrations contained in drilling muds. According to the method, for a given depth range, gaseous hydrocarbon concentration ratios are established in pairs at essentially-identical depths. Subsequently, a sub-set of the ratios is selected in order to form a signature that is representative of the gaseous hydrocarbon composition of the depth range. The aforementioned signature is defined by the at least one straight line representing the concentration of a first gaseous hydrocarbon in relation to the concentration of a second hydrocarbon. The signature is then compared to reference signatures in order to determine the hydrocarbon concentration of the geological stratum corresponding to the depth range.